

Cynthia Elizabeth Dunbar

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EDUCATION AND TRAINING

1976-1980	BA - Harvard University; <i>magna cum laude</i> in History of Science
1980-1984	MD - Harvard Medical School; <i>magna cum laude</i>
1984-1987	<i>Residency</i> in Internal Medicine; Boston City Hospital, Boston, MA
1987-1990	<i>Medical Staff Fellow</i> , Clinical Hematology Branch, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, Maryland (post-doctoral training in the laboratory of Dr Arthur Nienhuis)
1990-1991	<i>Fellow</i> in Hematology, University of California, San Francisco, CA
2013-2014	<i>Fellow</i> , Executive Leadership in Academic Medicine (ELAM), an intensive one-year leadership training program aimed at expanding the national pool of qualified women candidates for leadership positions in academic medicine

PROFESSIONAL POSITIONS

1991-1996	<i>Senior Clinical Investigator (tenure-track)</i> , Hematology Branch, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD
1993-2007	<i>Director</i> , Clinical Hematology Fellowship Program, Hematology Branch, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD
1996-2000	<i>Senior Investigator (tenured)</i> , Hematology Branch, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD
1997-2007	<i>Associate Editor</i> , Blood journal, published by the American Society of Hematology, Washington, DC
2000-present	<i>Head</i> , Molecular Hematopoiesis Section, Hematology Branch, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD
2007-2013	<i>Editor-in-Chief</i> , Blood journal, published by the American Society of Hematology, Washington, DC

BOARD CERTIFICATIONS

1985	National Board of Medical Examiners
1987	American Board of Internal Medicine
1992	Hematology Subspecialty, American Board of Internal Medicine
2005	Hematology Subspecialty, American Board of Internal Medicine, re-certification

MEDICAL LICENSE

Maryland (active)

INSTITUTIONAL ACTIVITIES (SELECTED)

Warren Grant Magnusson Clinical Center Advisory Committee: 1992-1997
NIH Research Day Organizing Committee: 1993, 1997, 2008
NIH Clinical Research Center Design Committee: 1997-2002
NIH Clinical Center Consultation Review Committee: 1997-2002
NIH Clinical Tenure Committee: 1997-present
NIH Central Tenure Committee: 1998-2001, 2005-2008
NHLBI Tenure and Promotions Committee: 1999-2005
Clinical Research Training Program: 2002-2010, Board Member
NIH National Clinical Research Workforce Implementation Group: 2003-2007
Medical Research Scholars Program: 2010-present, Board Member
Women in Biomedical Careers Intramural Committee: 2013-present
NHLBI Representative to the NIH Women Scientist's Association: 2014-present
NIH Diversity Catalysts Committee: 2014-present

Search Committees (selected, of at least 25): Clinical Director, National Institute of Dental Research (1994); Director, Imaging Sciences and Radiology (1999, 2005); Director, National Center for Regenerative Medicine (2010), Earl Stadtman Scholars (2009-present); Clinical Director, National Heart, Lung and Blood Institute (2012)

PROFESSIONAL ACTIVITIES (SELECTED)

American Society of Hematology: Multiple positions 1989-present, including Program Committee, Education Committee, Publications Committee, Executive Committee (2007-2013), Nominations Committee (current), Bridge Grant Program Chair (current)

American Society of Gene and Cell Therapy: 1997-present, Founding Board Member and Board Member (3 terms), Nominating Committee (chair), Ethics Committee, Hematology Subsection (chair), Education Committee, Publications Committee (chair), Vice-President 2014, President-Elect 2015, President 2016-2017.

NIH Assembly of Scientists: 2004-2009, Founder, Co-Chair; 2014-present, Board Member.

Translational Research Training Institute (European Hematology Association): 2009-present, Faculty and Steering Committee; Director 2015-2016

GRANT SUPPORT

As an NIH intramural investigator, grant support from external sources is prohibited, except grants to fund salaries for visiting post-doctoral fellows. At any time, 3-5 postdoctoral fellows in my laboratory are funded by external training grants from international research organizations. Competitive intramural grants received are listed below.

Bench-to-Bedside Trans-NIH Grant: Clonal Insertion Site Analysis in Rhesus Macaques and NIH Patients Transplanted with Retrovirally-Tranduced Hematopoietic Progenitor and Stem Cells: Implications for Leukemogenesis, P.I.s Cynthia Dunbar and Fabio Candotti, \$200,000; 2003-2004

Bench-to-Bedside Trans-NIH Grant: Development of MGMT-based in vivo drug selection strategies for gene therapy, P.I.s Cynthia Dunbar and Harry Malech, \$200,000; 2004-2005

Bench-to-Bedside Trans-NIH Grant: Therapeutic Approaches for Cancer Stem Cells in Small Cell Neuroendocrine Carcinoma. P.I.s Cynthia Dunbar and Curt Harris, \$200,000; 2005-2007

National Center for Regenerative Medicine Grant: Preclinical development of reprogrammed cells using the rhesus macaque. PI Cynthia Dunbar, \$150,000/year for two years, 2011-2013

PEER REVIEW (selected)

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- Editorial Boards: Molecular Therapy, Blood, Cancer Gene Therapy, Human Gene Therapy
 - Veterans Administration Grant Review Panel: Hematology Subsection: 1999-2002
 - Leukemia and Lymphoma Society Translational Research Panel: 2005-present
 - Doris Duke Charitable Trust Clinical Research Awards: 2006-2009
 - NIH Director's New Innovator Awards Review Panel: 2007-2009
 - NHLBI/NIDDK Hematology Study Section: 2009-2011
 - NCI Program Project Grant Study Section: 2012-2014
 - ASH Bridge Grant Study Section: Chair, 2013-present

AWARDS AND HONORS (selected)

Phi Beta Kappa, Harvard College, 1979
Cabot Prize, Harvard Medical School, 1984: for medical writing and thesis research
Public Health Service Commendation Medal, NIH, 1993: for pioneering gene transfer clinical trials
Director's Awards, NIH, 1994, 2001, 2007, 2011, 2015: for ACGME committee leadership, NHLBI fellowship program leadership, non-human primate program leadership, and eltrombopag clinical trial and FDA approval process leadership
American Society for Clinical Investigation, inducted 2003
Mentoring Award, NHLBI, 2006: for postdoctoral fellow mentorship
Fellow, American College of Physicians, inducted 2010
Distinguished Clinical Teacher Award (top NIH clinical teaching award) NIH, 2011
Orloff Science Award (NHLBI), 2012: for leadership of bone marrow imaging projects
Master, American College of Physicians, inducted 2013
NHLBI Director's Award, 2014: for clinical research contributions
Orloff Science Award (NIH) 2015, for leadership of eltrombopag clinical program and FDA approval for the first new drug for aplastic anemia in 30 years

COMMUNITY ACTIVITIES

Choral Arts Society of Washington/National Symphony Orchestra Chorus: 1987-1996 and 2011-present
Washington Area Girls Soccer League: board member 2000-2007
DC Stoddert Soccer Club: board member 1999-2007
American Civil Liberties Union of the National Capitol Area: President's Committee 1987-present

TRAINEES (years in lab, next position, and current position)

Yang Di, MD: Visiting Fellow 2016-present

Vinh Dang: Post-baccalaureate Fellow 2015-present

Ravi Yada: Post-baccalaureate Fellow 2015-present

Diego Espinoza: Post-baccalaureate Fellow 2015-present

Kyung-Rok Yu, PhD: Visiting Fellow 2014-present

Idalia Yabe, BA: Graduate Student 2014-present

Sandhya Panch, MD: Clinical Fellow in laboratory 2014-present

Marcus Corat, PhD: Research Fellow 2014-2016

Moonjung Jung, MD: Clinical Fellow in laboratory 2013-2016, next position Instructor and Clinical Scholar, Rockefeller University

So Gun Hong, DVM/PhD: Visiting Fellow then Research Fellow, 2010-2016, then Staff Scientist in Dunbar research group, NHLBI

Kyujoo Choi, BA: Post-baccalaureate Fellow 2014-2015. Next and current position: dental student.

Samson Koelle, BA: Post-baccalaureate Fellow 2013-2015. Next and current position: PhD student in Statistics, University of Washington, Seattle, WA.

Chuanfeng (Joy) Wu, PhD: Visiting Fellow then Research Fellow 2009-2015. Next and current position: Staff Scientist in Dunbar research group.

Thomas Winkler, MD: Visiting Fellow and Clinical Fellow 2007-2014. Next and current position: Staff Clinician, Dunbar research group, Hematology Branch, NHLBI.

William Hughes, BS: Post Baccalaureate IRTA 2012-2014. Next and current position: medical student, University of Georgia/Georgia Regents University School of Medicine, Athens, GA.

Chen Glait-Santar, PhD: Visiting Fellow 2013-2014. Next and current position: postdoctoral fellow, Weizmann Institute, Rehovet, Israel.

Brian Li, BA: Post Baccalaureate IRTA 2012-2013. Next and current position: MD/PhD student,

Harvard/MIT Health Sciences and Technology Program.

Charles Eke, BA; Post Baccalaureate IRTA 2012-2013. Next and current position: graduate student, Morehouse School of Medicine.

Taha Bat, MD; Visiting Fellow 2011-2013. Next and current position: internal medicine resident, Akron Hospital System, Akron, OH.

Cecilia Barese, MD; Research Fellow 2008-2013. Next and current position: Staff Scientist, Center for Cancer and Immunology Research, Children's National Medical Center, Washington, DC.

Zanetta Chang, BS; Post Baccalaureate IRTA 2011-2012. Next and current position: MD/PhD student, Duke University School of Medicine, Durham, NC.

Alexander Jares, BA; Post baccalaureate IRTA 2011-2012. Next and current position: MD/PhD student, SUNY School of Medicine, Stonybrook, NY.

Ronan Desmond, MD; Visiting Fellow 2009-2012. Clinical Fellow 2012-2013, Next Position: Staff Clinician, Consultative Hematology Service, Hematology Branch, NHLBI, Bethesda, MD. Current position: Senior Consultant Haematologist, Tallaght Hospital and the University of Dublin, Dublin, Ireland.

Brian Ichwan, BS; Post Baccalaureate IRTA 2010-2011. Next and current position: medical student, The Ohio State University School of Medicine, Columbus, OH.

Jean-Yves Metais, PhD; Visiting Fellow then Research Fellow 2006-2012. Next position: Staff Scientist, Molecular Hematopoiesis Section, Hematology Branch, NHLBI, 2012-2014. Current position: Scientist, Department of Transplantation, St. Jude Children's Research Hospital, Memphis, TN.

Andre LaRochelle, MD/PhD; Clinical Fellow 2004-2010. Next position: Staff Clinician, Molecular Hematopoiesis Section, Hematology Branch, NHLBI, Bethesda, MD. Current position : Tenure-track Investigator, Hematology Branch, NHLBI, Bethesda, MD.

Ashley Dunfee, BS; Post Baccalaureate IRTA 2009-2010. Next and current position: medical student, University of Michigan School of Medicine, Ann Arbor, MI.

Amy Cantilena, BS; Post Baccalaureate IRTA 2008-2010. Next and current position: MD/PhD student, University of Kansas School of Medicine, Kansas City, MO.

Joshua Clevenger, BA; Post Baccalaureate IRTA 2007-2009. Next and current position: Medical student, Lerner College of Medicine, Cleveland Clinic.

Jianjun Xie, PhD; Visiting Fellow 2007-2009. Next and current position: Senior Clinician/Pediatric Hematologist, Daopei Hospital, Beijing China.

Georg Aue, MD; Clinical Fellow 2006-2009. Next position: Staff Clinician, Laboratory of Lymphoid Malignancies, Hematology Branch, NHLBI, Bethesda, MD. Current position: Staff Clinician, Laboratory of Transplantation Immunotherapy, Hematology Branch, NHLBI, Bethesda, MD.

Inho Kim, MD; Visiting Fellow 2007-2008, Next and current position: Assistant Professor, Department of Hematology, Catholic University of Daegu, Seoul, Korea.

Theo Gomes, BS; Post baccalaureate IRTA 2005-2008. Next position: Medical student, Chicago College of Medicine, Chicago, IL. Current position: Resident, Emergency Medicine, Rush College of Medicine, Chicago, IL.

Yoo-Jin Kim, MD; Visiting Fellow 2005-2007. Next and current position: Assistant Professor, Department of Hematology, Catholic University of Korea, Seoul, South Korea.

Jingqiong Hu, MD/PhD; Visiting Fellow 2004-2007. Next position: Research Fellow, Genetics and Molecular Biology Center, NHBLI, Bethesda, MD. Current position: Associate Professor, Huazhong University of Science and Technology, Wuhan, China.

Rima Adler, PhD; Graduate Student 2000-2007. Next position: IRTA Fellow, Transplantation Biology Section, Center for Cancer Research, National Cancer Institute, Bethesda, MD. Current position: Technical Consultant, Miltenyi, Bethesda, MD.

Stephen Lemery MD; Clinical Fellow 2002-2006. Next position: Medical Officer, Food and Drug Administration, Rockville, MD. Current position: Lead Medical Officer, Food and Drug Administration, Rockville, MD.

Ruth Seggewiss, MD/PhD; Visiting Fellow 2002-2005. Next position: Assistant Professor, University of Wurzburg, Wurzburg, Germany. Current position: Associate Professor and Group Leader, University of Wurzburg, Wurzburg, Germany.

Bum Kee Hong, MD; Visiting Fellow 2003-2005. Next position: Assistant Professor, Department of Cardiology, Yongdong Severance Hospital, Seoul, Korea. Current position: Associate Professor, Department of Cardiology, Yongdong Severance Hospital, Seoul, Korea.

Cole Ferguson BA; Post baccalaureate IRTA 2003-2005. Next position: MSRTP MD/PhD student, University of Michigan, Ann Arbor, MI. Current position: Resident in Anatomic and NeuroPathology, Washington University School of Medicine, St. Louis, MO.

Mikko Laukkanen, PhD; Visiting Fellow 2002-2005. Next position: Research Scientist, University of Kuopio, Kuopio, Finland. Current position: Group Leader, IRCCS Research Foundation, Naples, Italy.

Boris Calmels, PhD; Visiting Fellow 2002-2004. Next position: Scientist, Centre de Thérapie Cellulaire, Institut Paoli-Calmettes, Marseille, France. Current position: Director, Centre de Thérapie Cellulaire, Institut Paoli-Calmettes, Marseille, France.

Jamie Robyn, MD, PhD; Clinical Fellow 2001-2004, Next position: Staff Clinician, Laboratory of Allergic Diseases, National Institute of Allergy and Infectious Diseases, Bethesda, MD. Current position: Senior Physician, VA Medical Center, Akron, OH.

Peiman Hematti, MD; Clinical Fellow 2000-2004. Next position: Assistant Professor, Department of Medicine and the Stem Cell Institute, University of Wisconsin, Madison, WI. Current position: Associate Professor, Department of Medicine and the Stem Cell Institute, University of Wisconsin, Madison, WI.

Ken Kuramoto, MD, PhD; Visiting Fellow 2001-2003. Next position: Assistant Professor, Jichi School of Medicine, Tochigi, Japan. Current position: Attending physician/hematologist, Chuden Hospital, Hiroshima, Japan.

Natasha Bamji, BA; Post Baccalaureate IRTA 2001-2002. Next position: Medical Student, New York Medical College, Valhalla, NY. Current position: Assistant Professor of Pediatrics, Department of Endocrinology, New York Medical College, New York, NY.

K. Allison Hinds, PhD; IRTA Fellow 1999-2002. Next position: consultant, Battelle Memorial Institute. Current Position: Analyst, Department of Defense, Arlington, VA.

Magnus Magnusson, MD; Clinical Fellow 1999-2002. Next position: Assistant Professor, Department of Hematology, University of Reykjavik, Reykjavik, Iceland. Current position: Professor, Department of Hematology, University of Reykjavik, Reykjavik, Iceland

Patricia Shi, MD; Clinical Fellow 1999-2002. Next position: Assistant Professor, Department of Medicine, Mount Sinai School of Medicine, NYC, NY. Current position: Medical Director, New York Blood Center, New York, NY.

Kristin Meade, BA; Post Baccalaureate IRTA 1999-2000. Next position: MD/PhD Student, Stanford University, Palo Alto, CA. Current position: Assistant Professor, Department of Palliative Care, Duke University School of Medicine.

Maasaki Takatoku, MD/PhD; Visiting Fellow 1998-2000. Next position: Assistant Professor, Jichi Medical School, Tochigi, Japan. Current position: Medical Director, Novartis/Japan, Tokyo, Japan.

Tong Wu, MD; Visiting Fellow 1997-2000. Next position: Assistant Professor, Institute of Hematology, Beijing University, Beijing, China. Current Position: Medical Director, Beijing Daopei Hospital, Beijing, China.

Dominik Heim, MD; Visiting Fellow 1997-2000. Next position: Physician, Hematology Department, University Hospital, Basel, Switzerland. Current position: Chief Physician, Hematology, University Hospital, Basel, Switzerland.

Hyeoung Joon Kim, MD/PhD; Visiting Fellow 1997-1999. Next position: Associate professor, Chonnam National University Medical School, Gwangju, Korea. Current position: Chair and Professor, Department of Hematology/Oncology, Chonnam National University Medical School, Gwangju, Korea.

Neelam Giri, MD; Clinical Fellow 1997-1999. Next position: Assistant Professor and Attending Physician, Alfred I DuPont Hospital for Children/Thomas Jefferson University School of Medicine. Current position: Staff Clinician, Clinical Genetics Branch, National Cancer Institute, Bethesda, MD.

Richard Huhn, MD; Clinical Fellow 1996-1998. Next position: Medical Director, Coriell Institute for Medical Research, Camden, NJ. Current position: Vice-President and Medical Director, Biothera, Eagan, MN.

John Tisdale, MD; Clinical Fellow 1995-1998. Next position: Tenure-Track Investigator, Molecular and

Clinical Hematology Branch, NIDDK. Current position: Tenured Senior Investigator, Molecular and Clinical Hematology Branch, NHLBI.

Yutaka Hanazono, MD/PhD; Visiting Fellow 1995-1998. Next position: Assistant Professor, Division of Genetic Therapeutics, Jichi Medical School, Tochigi, Japan. Current position: Director and Professor, Center for Regenerative Medicine, Jichi Medical School, Tochigi, Japan.

Jian Mei Yu, MD; Visiting Fellow 1994-1997. Next position: Research Scientist, Walter Reed Army Medical Center Biotechnology Center/IOMAI Corporation, Washington, DC.

Robert Emmons, MD; Clinical Fellow 1993-1996. Next position: Assistant Professor, University of Massachusetts School of Medicine, Worcester, MA. Current position: Medical Director for Hematology-Oncology, Ochsner Health Systems, New Orleans, LA.

Malika Sekhar, MD; Visiting Fellow 1994-1995. Next position: Assistant Professor, Transplantation Service, West Middlesex University Hospital, Middlesex, UK. Current position: Associate Professor, Royal Free Hospital/University College London, London, UK.

Toshihiro Soma, MD/PhD; Visiting Fellow 1992-1994. Next position: Associate Professor of Hematology, Third Department of Internal Medicine, Osaka University, Osaka, Japan. Current Position: Professor of Hematology, Hyogo School of Medicine, Osaka, Japan.

Rajni Agarwal-Hashmi, MD; Clinical Fellow 1992-1993. Next position: Assistant Professor of Pediatrics, Cincinnati Children's Hospital, Cincinnati, OH. Current position: Associate Professor of Pediatrics, Stanford University School of Medicine, Palo Alto, CA.

Aliza Cassel, PhD; Visiting Fellow 1991-1992. Next position: Assistant Director, Hematology Service, Carmel Hospital, Haifa, Israel. Current position: Director, Hematology Service, Carmel Hospital, Haifa, Israel.

PUBLICATIONS

1. Nienhuis AW, Bodine DM, Browder T, Chung S-W, *Dunbar CE*, Karlsson S, Wong PMC. Transfer of genes into hematopoietic cells with retroviral vectors. Cell Physiology of Blood, edited by R.B. Gunn and J.C. Parker. Rockefeller University Press, NY. 43:79-89, 1988.
2. Wong PMC, Chung S-W, *Dunbar CE*, Bodine DM, Ruscetti S, Nienhuis AW. Retroviral mediated transfer and expression of the interleukin 3 gene in mouse hematopoietic cells results in a myeloproliferative disorder. Mol Cell Biol, 9:798-808, 1989.
3. *Dunbar CE*, Travis W, Kan YW, Nienhuis AW. 5-Azacytidine treatment in a thalassemic patient unable to be transfused due to multiple alloantibodies. Brit J Hematol, 72:467-468, 1989.
4. *Dunbar CE*, Browder TM, Abrams JS, Nienhuis AW. COOH-terminal-modified interleukin-3 is retained intracellularly and stimulates autocrine growth. Science, 245:1493-1496, 1989.
5. Browder TM, *Dunbar CE*, Nienhuis AW. Private and public autocrine loops in neoplastic cells. Cancer Cell, 1:9-17, 1989.
6. Nienhuis AW, Bodine D, Browder T, and *Dunbar C*. Dysregulated interleukin-3 production causes a myeloproliferative syndrome in mice following retroviral mediated gene transfer. Molecular Biology

- of Hematopoiesis, edited by Sachs L, Abraham NG, Wiedermann CJ, Levine AS, Kohwalinka G. Intercept Ltd., Andover, Hampshire, 469-482, 1989.
7. Brandt SJ, Bodine DM, *Dunbar CE*, Nienhuis AW. Dysregulated interleukin-6 expression produces a syndrome resembling Castleman's disease in mice. *J Clin Invest*, 86:592-599, 1990.
 8. *Dunbar CE*, Sachs DH, Nienhuis AW. Introduction of an activated RAS oncogene into murine bone marrow lymphoid progenitors via retroviral gene transfer results in thymic lymphomas. *Oncogene Research*, 6:39-51, 1991.
 9. Brandt SJ, Bodine DM, *Dunbar CE*, Nienhuis AW. Retroviral-mediated transfer of interleukin-6 into hematopoietic cells of mice results in a syndrome resembling Castleman's disease. *Current Topics in Microbiology and Immunology*. Springer-Verlag, Berlin, Heidelberg, 166: 37-41, 1990.
 10. *Dunbar CE*, Smith D, Kimball J, Garrison L, Nienhuis AW, and Young NS. Treatment of Diamond-Blackfan Anemia with the hematopoietic growth factors GM-CSF and IL-3. *Brit J Hematol*, 79:316-321, 1991.
 11. Young NS, *Dunbar CE*. Cytokines for treatment of bone marrow failure syndromes. In *Clinical Applications of Cytokines: Role in Pathogenesis, Diagnosis and Therapy*, edited by Oppenheim J, Rossio J, and Gearing A. Oxford Press, England, 1993, 207-216.
 12. *Dunbar CE*, Stewart FM. Separating the wheat from the chaff: selection of benign hematopoietic cells in chronic myeloid leukemia. *Blood*. 79:1107-1110, 1992.
 13. Donahue RE, Kessler S, Bodine D, McDonagh K, *Dunbar C.*, Goodman S, Agricola B. Byrne E, Raffeld M, Moen R, Backer J, Zsebo K, Nienhuis AW. Helper virus induced T-cell lymphoma in non-human primates after retroviral mediated gene transfer. *J Exp Med*, 176:1125-1135, 1992.
 14. *Dunbar CE*, Nienhuis AW, Stewart FM, Quesenberry P, O'Shaughnessy J, Cowan K, Cottler-Fox M, Leitman S, Goodman S, Sorrentino BP, Young NS, McDonagh K, Donahue RE, Bodine D, Cassell A. Genetic marking with retroviral vectors to study the feasibility of stem cell gene transfer and the biology of hematopoietic reconstitution after autologous transplantation in multiple myeloma, chronic myelogenous leukemia, or metastatic breast cancer. *Human Gene Therapy*, 4:205-222, 1993.
 15. O'Shaughnessy JA, Cowan KH, Wilson W, Bryant G, Goldspiel B, Gress R, Nienhuis AW, *Dunbar C*, Sorrentino BP, Stewart FM. Pilot study of high dose ICE (ifosfamide, carboplatin, etoposide) chemotherapy and autologous bone marrow transplant (ABMT) with neoR-transduced bone marrow and peripheral blood stem cells in patients with metastatic breast cancer. *Human Gene Therapy*. 4:331-254, 1993.
 16. O'Shaughnessy JA, Cowan KH, Nienhuis AW, McDonagh KT, Sorrentino BP, *Dunbar CE*, Chieang Y, Wilson W, Goldspiel B, Kohler D. Retroviral mediated transfer of the human multidrug resistance gene (MDR-1) into hematopoietic stem cells during autologous transplantation after intensive chemotherapy for metastatic breast cancer. *Human Gene Therapy*, 5:891-911, 1994.
 17. *Dunbar CE*, Nienhuis AW. The myelodysplastic syndromes. In *Blood: Principles and Practice of Hematology*, Edited by Handin R, Lux S, and Stossel T. J.B. Lippincott, Philadelphia, PA, 1995.
 18. Orchard PJ, Detrick RA, Gorden K, *Dunbar CE*, Vallera DA, Taylor P, McIvor RS, Blazar BR. Retroviral mediated transfer of the murine IL-3 gene engineered for intracellular retention results in a myeloproliferative syndrome but is associated with circulating IL-3 levels. *Exp Hematol*, 21:1245-1254, 1993.
 19. *Dunbar CE*, Nienhuis AW. Multiple myeloma: new approaches to therapy. *JAMA*, 269:2412-2416, 1993.
 20. Cassel A, Cottler-Fox M, Doren S, *Dunbar CE*. Retroviral-mediated gene transfer into CD34-enriched human peripheral blood stem cells. *Exp Hematol*, 21:585-591, 1993.
 21. *Dunbar CE*. Future directions in the management of multiple myeloma. In *Alkeran for Injection in the Management of Multiple Myeloma*, Edited Barlogie B, NCM Publishers, NY, 1993.
 22. *Dunbar CE*, Bodine DM, Sorrentino B, Donahue RE, McDonagh K, Cottler-Fox M, O'Shaughnessy J, Cowan K, Carter C, Doren S, Cassell A, Nienhuis AW. Gene transfer into hematopoietic cells:

- implications for cancer therapy. *Annals of the New York Academy of Sciences*, 716:216-224, 1994.
23. Dunbar CE, Nienhuis AW, Stewart FM, Quesenberry P, O'Shaughnessy J, Cowan K, Cottler-Fox M, Leitman S, Goodman S, Sorrentino BP. Amendment to clinical research projects. Genetic marking with retroviral vectors to study the feasibility of stem cell gene transfer and the biology of hematopoietic reconstitution after autologous transplantation in multiple myeloma, chronic myelogenous leukemia, or metastatic breast cancer. *Human Gene Therapy*, 4:205-222, 1993.
 24. Blaese RM, Culver KW, Chang L, Anderson WF, Mullen C, Nienhuis AW, Carter C, Dunbar C, Leitman S, Berger M. Treatment of severe combined immunodeficiency (SCID) due to adenosine deaminase deficiency with CD34+ selected autologous peripheral blood cells transduced with a human ADA gene. Amendment to clinical research project 90-C-195, January 10, 1992. *Human Gene Therapy*, 4:521-527, 1993.
 25. Agarwal R, Doren S, Hicks B, Dunbar CE. Long-term culture of CML marrow cells on stem cell factor-deficient stroma favors benign progenitors. *Blood*. 85:1306-1312, 1995.
 26. Cockayne DA, Bodine DM, Cline A, Nienhuis AW, Dunbar CE. Transgenic mice expressing antisense interleukin-3 RNA develop a B-cell lymphoproliferation syndrome or neurologic dysfunction. *Blood*, 84:2699-2710, 1994.
 27. Cottler-Fox M, Cipolone K, Yu M, Berenson R, O'Shaughnessy J, Dunbar CE. Positive selection of CD34+ hematopoietic cells using an immunoaffinity column results in T cell depletion equivalent to elutriation. *Exper Hematol*, 23:320-322, 1995.
 28. Brodsky RA, Hasegawa S, Fibach E, Dunbar CE, Young NS, Rodgers GP. Acquired sideroblastic anaemia following progesterone therapy. *Brit J Haematol*, 87:859-862, 1994.
 29. Dunbar CE, Emmons RVB. Gene transfer into hematopoietic progenitor and stem cells: progress and problems. *Stem Cells*, 12:563-576, 1994.
 30. Dunbar CE. Clinical gene therapy. In *Cell Therapy, Stem Cell Transplantation, Gene Therapy, and Cellular Immunotherapy*, 369-385, edited Morstyn G, Sheridan W. Cambridge University Press, New York City, NY, 1996.
 31. Dunbar CE, Cottler-Fox M, O'Shaughnessy JA, Doren S, Carter C, Berenson R, Brown S, Moen R, Greenblatt J, Stewart M, Leitman S, Wilson WH, Cowan K, Young NS, Nienhuis AW. Retrovirally-marked CD34-enriched peripheral blood and bone marrow cells contribute to long-term engraftment after autologous transplantation. *Blood*. 85:3048-3057, 1995. (corresponding author)
 32. Soma T., Dunbar CE. In vivo models for studying the role of autocrine or paracrine growth factors in hematologic malignancies. *Exp Hematol* 23:385-388, 1995.
 33. Xu L, Kluepfel-Stahl S, Blanco M, Schiffmann R, Dunbar CE, Karlsson S. Growth factors and stromal support generate very efficient retroviral transduction of peripheral blood CD34+ cells from Gaucher patients. *Blood*. 86:141-146, 1995.
 34. Xu LC, Karlsson S, Byrne ER, Kluepfel-Stahl S, Kessler SW, Agricola BA, Sellers S, Kirby M, Dunbar CE, Brady RO, Nienhuis AW, Donahue RE. Long-term *in vivo* expression of the human glucocerebrosidase gene in non-human primates after CD34+ hematopoietic cell transduction with cell-free retro viral vector preparations. *Proc Natl Acad Sci USA*, 92:4372-4376, 1995.
 35. Dunbar CE, Cottler-Fox M, O'Shaughnessy J, Cowan K, Carter C, Doren S, Young NS, Nienhuis AW. Gene transfer into hematopoietic stem and progenitor cells. 7th International Symposium on Autologous Bone Marrow Transplantation, *Autologous Marrow and Blood Transplantation*. 7:247-254, 1995.
 36. Dunbar CE. Hematopoietic stem cells as targets for gene therapy. *Marrow Transplantation Reviews*. 4:26-29, 1994.
 37. Bock TA, Orlic D, Dunbar CE, Broxmeyer HE, Bodine DM. Improved engraftment of human hematopoietic cells in severe combined immunodeficient (SCID) mice carrying human cytokine transgenes. *J Exp Med*. 182:2037-2043, 1995.
 38. Dunbar CE. Gene transfer to hematopoietic stem cells: Implications for gene therapy of human

- disease. Annual Review of Medicine. 47:11-20,1996.
39. Sekhar M, Kotani H, Doren S, Agarwal R, McGarrity G, *Dunbar CE*. Retroviral transduction of CD34-enriched hematopoietic progenitors cell under serum-free conditions. Human Gene Therapy. 7:33-38, 1996.
 40. Soma T, Yu JM, *Dunbar CE*. Maintenance of murine long-term repopulating stem cells in *ex vivo* culture is affected by modulation of TGF- β but not MIP-1 α activities. Blood. 87: 4561-4567, 1996.
 41. Mavroudis D, Read E, Cottler-Fox M, Couriel D, Molldrem J, Carter C, Yu M, *Dunbar C.*, Barrett J. CD34+ cell dose predicts survival, post-transplant morbidity, and rate of hematologic recovery after allogeneic marrow transplants for hematologic malignancies. Blood. 88:3223-3229, 1996.
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INVITED PRESENTATIONS AND VISITING LECTURESHIPS (SELECTED)

- UCLA Symposium: Gene Transfer, Tamarron, CO, February 28, 1988. "Retroviral Transfer and Expression of the Interleukin-3 Gene in Mouse Bone Marrow Results in a Myeloproliferative Disorder."
- Forty-Third Annual Symposium on Fundamental Cancer Research: Growth Factors and Their Receptors in Cancer, M.D. Anderson Cancer Center, Houston, TX, December 5, 1990. "Models of Hematopoietic Malignancies Generated by Retrovirus-mediated Transfer into Hematopoietic Cells."
- Clinical Center Grand Rounds, NIH Clinical Center, Bethesda, MD, June 17, 1992. "Multiple Myeloma: New Advances in Therapy."
- Novel Strategies in Cancer Treatment, Beth Israel Hospital, Boston, MA, March 26, 1993. "Hematopoietic Stem Cell Gene Transfer."
- Keystone Symposium: Gene Therapy, Keystone, CO, April 12-18, 1993. "Retroviral Gene Transfer in Hematopoietic Stem Cell Transplantation."
- Pediatric Grand Rounds, Memorial Sloan-Kettering Cancer Center, New York City, NY, June 24, 1993. "Hematopoietic Stem Cell Gene Transfer: Promises and Problems."
- New York Academy of Sciences Symposium on Gene Therapy for Neoplastic Diseases, Washington, DC, June 28, 1993. "Gene Therapy into Hematopoietic Cells: Implications for Cancer Therapy."
- Hematology-Oncology Grand Rounds, University of Arkansas Medical Center, Little Rock, AR, August 9, 1993. "Hematopoietic Stem Cell Gene Transfer: Promises and Problems."
- Laboratory of Tumor Cell Biology Annual Meeting, Washington, DC, August 28, 1993. "Gene Transfer into Hematopoietic Stem Cells."
- The Role of Biological Response Modifiers in Molecular and Clinical Transfusion Medicine, American Association of Blood Banks, Arlington, VA, September 10, 1993. "Overview of Growth Factors in Bone Marrow Transplantation and Gene Transfer."
- Second International Conference on the Gene Therapy of Cancer, San Diego, CA, November 18, 1993. "Gene Transfer into Hematopoietic Stem Cells."
- NIH Research Festival '93 Plenary Symposium on Clinical Applications of Gene Therapy, NIH Clinical Center, September 20, 1993. "Gene Transfer into Hematopoietic Stem Cells."

- Education Session, American Society of Hematology, St. Louis, MO, December 4, 1993. "Experimental Bone Marrow Transplantation."
- Keystone Symposia: Advances and Controversies in Bone Marrow Transplantation, Keystone, CO, January 23, 1994. "Stem Cell Targeted Gene Transfer."
- Gene Therapy and Immunotherapy of Cancer, Ein Gedi, Israel, March 2, 1994. "Gene Transfer into Hematopoietic Stem Cells."
- NIH Director's Seminar, NIH, Bethesda, MD, May 17, 1994. "Gene Transfer and Transgenic Mouse Model Approaches to Understanding Hematopoiesis."
- Grand Rounds, Boston University School of Medicine, Boston, MA, June 9, 1994. "New Approaches to Therapy of Stem Cell Disorders."
- Second International Conference on Growth Factors in Hematology and Oncology, Atlanta, GA, June 18, 1994. "Transfer of Peripheral Blood Stem Cells with the Multidrug Resistance Genes."
- Seventh International Symposium on Autologous Bone Marrow Transplantation, Arlington, TX, August 18, 1994. "Gene Transfer into Hematopoietic Stem and Progenitor Cells."
- Laboratory of Tumor Cell Biology Annual Meeting, Rockville, MD, September 27, 1994. "Gene Transfer into Hematopoietic: Stem and Progenitor Cells."
- European Working Group on Human Gene Transfer and Therapy, London, England, November 19, 1994. "Gene Transfer to Hematopoietic Stem and Progenitor Cells."
- University of Washington Educational Symposium, Nashville, TN, December 2, 1994. "The Latest Advances and Strategies for Hematopoietic Stem Cell Therapies."
- University of Pennsylvania Cancer Center Symposium, Philadelphia, PA, February 10, 1995. "Progress and Problems: Gene Transfer to Hematopoietic Stem and Progenitor Cells."
- Ninth Symposium on Molecular Biology of Hematopoiesis and Treatment of Leukemia and Lymphomas, Genoa, Italy, June 23-27, 1995. "Gene Marking in Adult Cancer Patients."
- President's Cancer Panel Meeting to Review Progress in Leukemia, Chicago, IL, July 20, 1995. "Progress and Problems: Gene Transfer to Hematopoietic Stem and Progenitor Cells."
- Vth International Myeloma Workshop, La Baule, France, September 10-13, 1995. "Engraftment of Genetically-marked Peripheral Blood and Bone Marrow."
- Stem Cell Gene Therapy: Biology and Technology, Rockville, MD, September 28-October 1, 1995. "Adult Bone Marrow Transplantation with Genetically-Marked Bone Marrow and Peripheral Blood Cells."
- Gene Therapy for Acquired Disease, Vanderbilt University, October 20, 1995. "Breast Cancer"
- International Symposium on Bone Marrow Transplantation - Basic and Clinical Studies, Tokyo, Japan, October 9-10, 1995. "Gene Transfer to Hematopoietic Stem and Progenitor Cells: Progress and Problems."
- Gene Therapy for Hematopoietic Stem Cells in Genetic Disease and Cancer, Keystone Symposia, Taos, New Mexico, February 4-9, 1996. "Gene Marking Studies in Primates and Humans."
- Biotechnology and Society, Princeton University, February 21, 1996. "Gene Therapy-Is it Time?"
- International Immunocompromised Host Society's 9th Symposium, Assisi, Italy, June 23-26, 1996. Plenary Speaker "Gene Transfer to Hematopoietic Stem and Progenitor Cells: Progress and Problems."
- Hematopoietic Stem Cells-International Symposium and Workshop, Hohenzollern, Germany, July 24-26, 1996. "Ex vivo Manipulation of Stem Cells: Lessons from Gene Marking Studies."
- NIH Clinical Research Day, NIH, Bethesda, MD. February 10, 1997. "Overview of Gene Transfer Studies Targeting Hematopoietic Cells."
- Annual Meeting of the American Society of Apheresis, Crystal City, VA. March 21, 1997 "Scientific Evidence for Repopulation of Bone Marrow by PBSC."

- 23rd Annual European Bone Marrow Transplantation Group Meeting, Aix-les-Bains, France. March 24, 1997. "Is It Possible to Monitor Engraftment?"
- Gene Therapy-Clinical Advances and Vector Development, Bethesda, MD. May 9, 1997. "Gene Transfer to Hematopoietic Cells, Progress and Problems."
- Frontiers of Malignant Hematology-Leukemia Research Fund of Canada, Toronto, Ontario. June 5, 1997. "Gene Transfer to Study Hematologic Malignancies."
- Congress on In Vitro Biology, Washington, DC. June 14, 1997. "Ex Vivo Stem Cell Expansion-Myth or Reality."
- 19th Annual Meeting of the American Society for Bone and Mineral Research, Cincinnati, OH, September 12, 1997. "Molecular and Cellular Approaches to Gene Therapy for the Skeleton: Perspectives from Hematopoietic Stem Cell Gene Therapy."
- 16th Annual Symposium on Immunohematology and Blood Transfusion, Bethesda, MD, September 18, 1997. "Hematopoietic Stem Cell Therapies."
- American Society for Blood and Bone Marrow Transplantation Annual Meeting, Miami Beach, FL, March 27, 1998. "NIH Genetic Marking and Therapy Clinical Trials."
- Grand Rounds, Washington Veterans Administration Hospital, Washington, DC, March 30, 1998. "Multiple Myeloma: New Directions."
- National Cancer Institute Grand Rounds, NIH, Bethesda, MD. "The Role of KSHV in Multiple Myeloma," April 21, 1998.
- 2nd Hematopoietic Stem Cell Gene Therapy Meeting, Orcas Island, WA, June 1-3, 1998. "Real Progress in Hematopoietic Stem Cell Gene Therapy-of Monkeys and Man."
- International Society for Hematopoietic Graft Engineering Annual Meeting, Baltimore, MD, June 4, 1998. "Ex Vivo Expansion."
- 25th Wilsede Meeting on Human Leukemias, Wilsede, Germany, June 21-24, 1998. "Genetic Marking and Genetic Therapy."
- 2nd International Conference on Stem Cell Transplantation for Autoimmune Disease, Basel, Switzerland, October 9-11, 1998. "Autologous Transplantation for Severe Chronic ITP."
- Fred Hutchinson Cancer Research Center, Seattle, Washington, November 2, 1998. "Insights into Stem Cell Biology from Large Animal Gene Marking Studies."
- Grand Rounds, Mount Sinai Medical School and Hospital, Cancer Center, December 17, 1998. "Progress Towards Clinically-Relevant Gene Transfer into Hematopoietic Stem Cells."
- American Association for Cancer Research Annual Meeting, Philadelphia, PA, April 14, 1999. "Hematopoietic Stem Cell Gene Transfer."
- Lentiviral Vectors Consensus Conference, Half Moon Bay, CA, April 29, 1999. "Do We Need Lentiviral Vectors?"
- Ontario Cancer Institute and Toronto General Hospital Grand Rounds, May 18, 1999. "Gene Transfer into Hematopoietic Stem Cells."
- Washington Hospital Center, Washington, DC, May 24, 1999. Cancer Center Research Conference. "Ex Vivo Stem Cell Expansion, Fact or Fiction?"
- American Society for Gene Therapy Annual Meeting, Washington, DC, June 9, 1999. "Introduction to Hematopoietic Cell Gene Transfer."
- American Society for Gene Therapy and the Smithsonian Institution Public Education Science in American Life Lecture Series, Washington, DC, June 11, 1999. "Introduction to Gene Therapy."
- 3rd International Conference on Stem Cell Transplantation for Autoimmune Disease, Worcester, MA, October 10, 1999. "Autologous Transplantation for Severe Chronic ITP."
- Harvard Medical School, Postgraduate Review Course, Boston, MA, October 24, 1999. "Bone Marrow Failure States."

- Howard Hughes Medical Institute Scholar Lecture Series, Bethesda, MD, November 8, 1999. "Stem Cell Gene Therapy Update."
- Children's National Hospital Research Institute, Washington, DC, November 10, 1999. "Insights into Hematopoiesis from Primate Models and Clinical Trials."
- Holland Laboratories of the American Red Cross, Rockville, MD, November 17, 1999. "Tracking Stem Cells In Vivo."
- Johns Hopkins Oncology Center Hematopoiesis and Immunology Society, Baltimore, MD, January 21, 2000. "Insights into Hematopoiesis from Primate Models and Clinical Trials."
- Drug Resistance Gene Therapy Conference, Case Western Reserve University, Cleveland, OH, February 10-11, 2000. "Effect of MDR1 on Primitive Engrafting Cells in Non-human Primates."
- Hammersmith Hospital and the Imperial College of Science, Technology and Medicine, London, England, February 22, 2000. "Insights into Hematopoiesis from Gene Marking Studies."
- Fourth Annual International Freiburg Symposium on Molecular Hematology, Freiburg, Germany, February 24-26, 2000, Insights into Hematopoiesis from Primate Models and Clinical Trials.
- 2000 Tandem IBMTR/ABMTR Meetings, Anaheim, CA, March 26-28, 2000. "Optimizing Gene Transfer with Retroviral Vectors."
- Hematology/Oncology Grand Rounds, Memorial Sloan-Kettering Cancer Center, April 11, 2000.
- Third Annual Meeting of the American Society of Gene Therapy, Denver, CO, June 1-4, 2000. "Introduction to Retroviral Vectors."
- Third International Workshop on Hematopoietic Stem Cells, Tübingen, Germany, September 14-16, 2000
- European Society for Gene Therapy Annual Meeting, Stockholm, Sweden, October 8, 2000
- Laboratory of Cell Biology, NHBIL, NIH, Bethesda, MD, January 5, 2001
- NHLBI Intramural Seminar Series, Lipsett Auditorium, January 8, 2001
- ASBMT/IBMTR Joint Transplantation Meetings, Keystone, CO, February 16, 2001
- Eurocancer 2000, Paris, France, June 7-9, 2001
- AMGEN, Thousand Oaks, CA, July 27, 2001
- FASEB Conference, Snowmass Village, CO, July 28-August 2, 2001
- University of Vermont Cancer Center Grand Rounds, September 4, 2001
- American Society of Hematology, Orlando, FL, December 10, 2001.
- Third Conference on Stem Cell Gene Therapy: Biology and Technology, Rockville, MD, March 21-23, 2002
- Research Seminar Series, New York University School of Medicine, April 12, 2002
- Chonnam University Hospital Molecular Medicine Series, Gwangju, South Korea, November 8, 2002
- 50th Anniversary of the Japanese Society of Transfusion Medicine, Tokyo, Japan, November 9, 2002
- Hiroshima University Department of Internal Medicine, Hiroshima, Japan, November 11, 2002
- American Society of Hematology, ITP Study Group, December 5, 2002
- American Society of Hematology, Philadelphia, PA, December 7, 2002
- University of Minnesota, Department of Hematology Research Seminar, January 15, 2003
- Mayo Clinics, Department of Hematology/Oncology seminar series, January 16, 2003
- American Society for Gene Therapy, Washington, DC, June 4, 2003.
- Mayo Clinics, Rochester, MN, Department of Medicine Grand Rounds, August 27, 2003
- NIH Clinical Center Grand Rounds, November 5, 2003
- Stem Cell Genotoxicity Retreat, San Diego, CA, December 10, 2003
- Long-term Follow-up Workshop, Minneapolis, MN, June 2, 2004

- Annual Meeting of the Asian Hematological Association, Beijing, China, June 25, 2004
- Hematopoietic Stem Cells V, Tubingen, Germany, September 16-18, 2004
- Biomediterranee 2004, Marseille, France, October 23-25, 2004
- Clinical Investigator Student Trainee Forum, Bethesda, MD, November 12-13th, 2004
- National Cancer Institute Grand Rounds, Bethesda, MD, March 15, 2005
- 2nd Stem Cell Clonality and Genotoxicity Retreat, St. Louis, MO, June 1, 2005
- American Society for Gene Therapy, St. Louis, MO, Invited Scientific Lecture. June 2, 2005
- European Society for Gene Therapy Annual Meeting, Plenary Speaker, Prague, Czechoslovakia, October 30, 2005
- Medizinische Universität Wien (University of Vienna), Vienna, Austria, November 2, 2005
- 50th Anniversary Symposium, Institut de Pasteur, Paris, France, December 1, 2005
- Children's Hospital of Pennsylvania Seminar Series, January 30, 2006.
- American Society for Gene Therapy, Baltimore, Maryland, Invited Workshop Lecture on Insertional Mutagenesis and Retroviral Vectors, June 1, 2006.
- Symposium, Gene Therapy for Primary Immune Deficiencies, Bethesda, MD, September 18, 2006.
- International Society for Experimental Hematology, Minneapolis, MN, October, 2006.
- 3rd Stem Cell Clonality and Genotoxicity Retreat, Orlando, Florida, December 12-13, 2006.
- Weinberger Lecture, Case Western Reserve School of Medicine, May 1, 2007.
- Grand Rounds, Ohio State Comprehensive Cancer Center, May 4, 2007.
- Canadian Gene Therapy Society, Langdon Hall, Cambridge, Ontario, Canada, May 7, 2007.
- IVth International Conference on Stem Cell Gene Therapy, Halkidiki, Greece, September 13-17, 2007
- 20th Anniversary Symposium, Institute of Hematology, Ruijin Hospital, Shanghai, China, October 26-27, 2007.
- Grand Rounds, Department of Hematology-Oncology, Beth Israel Hospital, Boston, MA, April 1, 2008.
- MD Anderson Department of Transplantation Seminar Series, April 24, 2008.
- 4th Annual Stem Cell Clonality and Genotoxicity Retreat, Boston, MA, June 1, 2008.
- 100th Anniversary Symposium, Landspítali-University Hospital, Reykjavik, Iceland, June 7, 2008.
- Grand Rounds, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio, November 3, 2008.
- Grand Rounds, Hematology-Oncology, University of Texas at San Antonio, San Antonio, Texas, May 20, 2009
- Transplant and Hematology Seminar Series, University of Würzburg, Würzburg, Germany, November 19, 2009
- 5th Annual Stem Cell Clonality and Genotoxicity Retreat, Hannover, Germany, November 21, 2009.
- American Society of Hematology Annual Meeting, Trainee Day Plenary speaker, New Orleans, LA, December 2009, 2010, 2011, 2012
- NIH Clinical Center Grand Rounds, March 3, 2010.
- University of Washington Medicine Grand Rounds, Seattle, WA, March 19, 2010.
- American Society for Cell and Gene Therapy Annual Meeting, Washington, DC, May 19, 2010.
- Modern Trends in Human Leukemia and Cancer, Wilsede, Germany, June 21, 2010.
- American Society of Hematology Annual Meeting, Trainee Day plenary speaker, Orlando, FL, December 4, 2010.

- Meet the Expert, American Society of Hematology Annual Meeting, Orlando, FL, December 6, 2010.
- Translational Research Training Institute, Marbella, Spain, March 24, 2012.
- American Society for Clinical Oncology Annual Meeting, Education Session, Chicago, IL, June 5, 2011.
- National Center for Regenerative Medicine Symposium, Plenary Speaker, Bethesda, MD, July 14, 2011.
- UCLA Human Gene Medicine Symposium, Los Angeles, CA, September 12, 2011.
- William Moloney Memorial Lecture, Brigham and Women's Hospital, September 22, 2011
- Paul M Aggeler Memorial Lecture, San Francisco General Hospital and the University of California San Francisco, October 4, 2011.
- American Society of Hematology Annual Meeting, Trainee Day plenary speaker, San Diego, CA, December 7, 2011.
- China Medical Education Foundation, Lectures on Publication Ethics in Beijing, Shanghai and Huangzhou, March 15-18, 2012.
- Translational Research Training Institute, Milan, Italy, March 24, 2012.
- DeGowan Lecture, University of Iowa, Iowa City, April 25, 2012.
- 6th Stem Cell Clonality and Genome Stability Retreat, Philadelphia, PA, May 15, 2012.
- NIH Clinical Center Grand Rounds Great Teacher Series, Bethesda, MD, June 13, 2012.
- Medical Research Scholars Program Lecture Series, Bethesda, MD, November 6, 2012.
- Workshop on Scientific Editing, Bethesda, MD, October 16, 2012.
- Medical Editors Round Table, New York City, New York, December 3, 2012.
- American Society of Hematology Annual Meeting, Trainee Day plenary speaker, Atlanta, GA, December 5, 2012.
- Grand Rounds, Department of Hematology-Oncology, Rhode Island Hospital/Alpert (Brown University) School of Medicine, Providence, RI, February 7, 2013
- Sommer Memorial Lectures, Oregon Health Sciences University, Portland, OR, May 9-10, 2013.
- American Society of Gene and Cell Therapy Annual Meeting, invited lecturer, Salt Lake City, UT, May 15, 2013.
- Plenary Lecture, NIH Research Day, November 6, 2013
- Bone Marrow Failure, Highlights of ASH, Atlanta GA, Dallas TX and Singapore, January-March, 2014.
- Stem Cell Institute, University of Minnesota, Minneapolis, MN, March 5, 2014.
- Symposium Honoring the 20th Anniversary of Allogeneic Stem Cell Transplantation at the NIH, Plenary Speaker, NIH, Bethesda, MD, September 11, 2014.
- Clinical Speaker Series, Medical Research Scholars Program, NIH, Bethesda, MD, September 18, 2014.
- Grand Rounds, Department of Medicine, Drexel University School of Medicine, Philadelphia, PA, September 17, 2014
- Plenary Speaker, Korean Society of Hematology, Seoul, South Korea, November 15, 2014.
- Broad Institute, University of Southern California, January 14, 2015.
- Non-human Primate Stem Cell Regenerative Medicine Workshop, September 27, 2015.
- Cardiovascular Regenerative Medicine Symposium, Bethesda, MD, September 28, 2015.
- Wiener Lecture, New York Blood Center, October 1, 2015
- German NK Society, Goettingen, Germany, October 7, 2015.
- University of Oslo, Department of Medicine Grand Rounds, October 11, 2015

- HERM (Hematology and Regenerative Medicine) Seminar Series, Karolinska Institute, Stockholm, Sweden, October 19, 2015
- CIM (Center for Immunology and Microbiology), Karolinska Institute, Stockholm, Sweden, October 21, 2015
- Lund University Stem Cell Institute Seminar Series, Lund, Sweden, October 27, 2015